CLAIMS

1. An antispasticity aid device, comprising:

a planar hand-mounting member, said hand-mounting member being formed of rigid material and being sized and shaped to extend beyond outer dimensions of a human hand without a thumb;

said hand-mounting member having an upper surface, a lower surface, a front edge, a rear edge, a first side edge and a second side edge;

said hand-mounting member having at least two first fastening slots disposed adjacent said first and second side edges, respectively;

a first restraining strap, said first strap being sized and shaped to fit slidably through said first fastening slots and having a means for adjusting a length of said first strap;

a thumb-mounting member, said thumb-mounting member being formed of rigid material and being sized and shaped to extend beyond outer dimensions of a human thumb;

said thumb-mounting member having an upper surface, a lower surface, a front edge, a rear edge, a first side edge and a second side edge;

said thumb-mounting member having at least two second fastening slots disposed adjacent said first and said second side edges of said thumb-mounting member, respectively;

a second restraining strap, said second strap being sized and shaped to fit slidably through said second fastening slots and having a means for adjusting a length of said second strap;

said thumb-mounting member being rotatably attached at its rear edge to said first side edge of said hand mounting member, permitting said thumb-mounting member to rotate through an arc in the plane of said hand mounting member; and

whereby, when a hand of a stroke victim is placed upon said hand-mounting member, said first restraining strap is disposed over said hand and through said first fastening slots, said length of said first restraining strap is adjusted to hold said hand in firm contact with said hand mounting member and when a thumb of stroke victim is placed upon said thumb-mounting member, said second restraining strap is disposed over said thumb and through said second fastening slots, said length of said second restraining strap is adjusted to hold said thumb in firm contact with said thumb mounting member, said thumb-mounting member is adjustable with respect to said hand-mounting member for comfort of said stroke victim.

2. The antispasticity aid device, as described in Claim 1, wherein said means for adjusting said length of either of said first and said second restraining straps further comprises:

a hooking element disposed adjacent a first end of said restraining strap;

a looping element extending from a second end of said restraining strap toward said first end; and

whereby, when said hooking element is attached to said looping element at different points along said length of said restraining strap, said length of either of said first and said second restraining strap is adjusted.

3. The antispasticity aid device, as described in Claim 1, wherein said thumb-mounting member is lockable in a plurality of positions about a point where it is rotatably attached at its rear edge to said first side edge of said hand-mounting member.

4. A first accessory for use with either of said antispasticity aid device as described in Claim 1 and said antispasticity aid device as described in Claim 1 having a fixed thumb-mounting member, comprising:

an arm-rest portion, said arm-rest portion being formed of planar semi-rigid, resilient material, having a hand-shaped section and an extension section;

said hand-shaped section having a distal end and a proximate end and being sized and shaped to support said antispasticity aid device;

said extension section having a first end and a second end and having a length less than a distance from an armpit to a wrist of a stroke victim, and being attached at said first end to said proximate end of said hand-shaped section;

said first accessory being attached to said antispasticity aid device using either of said first and said second fastening straps and said hooking and said looping fastening portions; and

whereby, when said first accessory is attached to said antispasticity aid device and said antispasticity aid device is attached to the hand of a stroke victim, an arm of said stroke victim may be comfortably positioned on an arm of an armchair or sofa.

5. The first accessory as described in Claim 4, further comprising:

an upper padding portion, said upper padding portion being formed of resilient padding material and being sized and shaped to fit over an upper surface of said extension section of said arm-rest portion; and

whereby, when said first accessory is attached to said antispasticity aid device, said antispasticity aid device is attached to the hand of a stroke victim and said upper padding portion is positioned over said extension section, said arm of said stroke victim will be more comfortably positioned upon said first accessory.

6. The first accessory as described in Claim 4, further comprising:

a lower padding portion, said lower padding portion being formed of resilient padding material and being sized and shaped to fit over a lower surface of said extension section of said arm-rest portion; and

whereby, when said first accessory is attached to said antispasticity aid device, said antispasticity aid device is attached to the hand of a stroke victim and said lower padding portion is positioned under said extension

section, said arm of said stroke victim will be more comfortably positioned upon said first accessory.

7. The first accessory as described in Claim 4, wherein said extension section tapers in a vertical plane from said first end to said second end, thereby lowering a point of contact adjacent an armpit of said stroke victim.

8. The first accessory as described in Claim 5, wherein said upper padding portion is formed of an FDA approved foam material.

9. The first accessory as described in Claim 6, wherein said lower padding portion is formed of an FDA approved foam material.

10. The first accessory as described in Claim 5 or Claim 6, wherein said extension section is covered with washable material.

11. The first accessory as described in Claim 10, wherein said washable material is removable and replaceable.

12. The first accessory as described in Claim 4, wherein said second end of said extension section further comprises a padded portion, said padded portion being sized and shaped to fit comfortably into said armpit of a stroke victim.

13. The first accessory as described in Claim 4, wherein said extension section further comprises at least one pair of attachment slots, said attachment slots being disposed along side edges of said extension section between said first end and said second end and being sized and shaped to accommodate an attachment strap.

14. The first accessory as described in Claim 4, further comprising:

either of a hooking portion and a looping portion of a removable attachment device, said portion being affixed to an upper surface of said hand shaped section; and

said portion providing a mechanism for removably attaching to said antispasticity aid device.

15. A second accessory for use with either of said antispasticity aid device as described in Claim 1 and said antispasticity aid device as described in Claim 1 having a fixed thumb-mounting member, comprising:

a support platform, said support platform being formed of planar semi-rigid, resilient material, having an upper surface, having a lower surface and having a hand-support section and an arm support section;

said hand support section having a distal end and a proximate end and being sized and shaped to support said antispasticity aid device;

said arm support section having a first end and a second end and having a length less than a distance from an armpit to a wrist of a stroke victim,

and being attached at said first end to said proximate end of said hand-support section;

said second accessory being attached to said antispasticity aid device using either of said first and said second fastening straps and said hooking and said looping fastening portions;

a planar base, said planar base having an upper surface, a lower surface and being sized and shaped to fit beneath said support platform;

a leaf spring, said leaf spring having an upper section and a lower section and being formed with an acute angle between said upper section and said lower section;

said upper section being affixed to said lower surface of said support platform and said lower section being affixed to said upper surface of said planar base; and

whereby, when said second accessory is attached to said antispasticity aid device and said antispasticity aid device is attached to the hand of a stroke victim, said second accessory will permit said stroke victim to apply force against said leaf spring to provide physical therapy for arm muscles of said stroke victim.

16. The second accessory as described in Claim 15, further comprising padding material affixed to said upper surface of said support platform.

17. The second accessory as described in Claim 15, further comprising padding material affixed to said lower surface of said support platform.

18. The second accessory as described in Claim 15, further comprising a compression spring, said compression spring being disposed between said upper surface of said planar base and an underside of said hand-support section of said support platform, thereby providing additional resistance to said stroke victim seeking physical therapy.

19. The antispasticity aid device, as described in Claim 1, further comprising:

at least one mounting bracket, said mounting bracket being affixed to said lower surface of said planar hand-mounting member and being formed of resilient material;

said mounting bracket being sized and shaped to removably attach to either of a top bar of a walker and a cane handle; and

whereby the antispasticity aid device is easily attachable to either of said walker and said cane handle by a stroke victim not able to adequately grip such devices with a hand.

20. The antispasticity aid device, as described in Claim 1, further comprising:

either of a hooking portion and a looping portion of a removable attachment device, said portion being affixed to said lower surface of said planar hand-mounting member; and

said portion providing a mechanism for removably attaching said antispasticity aid device to accessory devices.

21. A third accessory for use with either of said antispasticity aid device as described in Claim 20 and said antispasticity aid device as described in Claim 20 having a fixed thumb-mounting member, comprising:

an arm-rest portion, said arm-rest portion being formed of planar semi-rigid, resilient material, having a hand-shaped section and an extension section;

said hand shaped section having an upper surface, a lower surface, a distal end and a proximate end and being sized and shaped to support said antispasticity aid device;

said hand shaped section having either of a looping portion and a hooking portion of a removable attachment device affixed to said upper surface for attachment to said antispasticity aid device

said extension section having a first end and a second end and having a length greater than a distance from a back of a wrist of a stroke victim, and being attached at said first end to said proximate end of said hand-shaped section;

at least one reinforcing element, said reinforcing element being formed of resilient material and being disposed within said arm-rest portion and extending from said second end of said extension section to at least into said hand shaped section;

a mounting hinge, said mounting hinge having a first portion and a second portion and being attached at said first portion to said reinforcing element adjacent said second end of said extension section and being

attached at said second portion to a wall adjacent either of a toilet and a bathtub;

said mounting hinge maintaining said third accessory in a position orthogonal to said wall; and

whereby, when attached to said wall, said third accessory will provide a comfortable location for a stroke victim to rest an arm when using either of said bathtub and said toilet.

22. A fourth accessory for use with either of said antispasticity aid device as described in Claim 1 and said antispasticity aid device as described in Claim 1 having a fixed thumb-mounting member, comprising:

a concave rest portion, said rest portion having an upper surface and a lower surface and being sized and shaped to accommodate an arm of a stroke victim using one of said antispasticity aid devices on said upper surface;

a support portion, said support portion having a top surface, a bottom surface, being of a length sufficient to support said rest portion, being attached at said top surface to said lower surface of said rest portion and being of a height sufficient to maintain said rest portion at a desired height;

an attachment portion, said attachment portion having an upper surface and a lower surface, being attached at said upper surface to said bottom surface of said support portion and being sized and shaped to fit frictionally over either of an arm of a chair and a sofa at said lower surface; and

whereby, when fitted to either of said arm of a chair or a sofa, said fourth accessory will provide a comfortable and secure rest location for a stroke victim's arm.

23. A fourth accessory for use with either of said antispasticity aid device as described in Claim 20 and said antispasticity aid device as described in Claim 20 having a fixed thumb-mounting member, comprising:

a walker, said walker having two pairs of downward pointing legs, each of said pairs attaching at upper ends to a top cross bar, at least one leg of each pair being hingedly joined to at least one connecting bar;

a support platform, said support platform being pivotally attached to a bracket, said bracket being attached to said at least one connecting bar;

said platform having a first end for supporting a wrist of a stroke victim and a second end for supporting said antispasticity aid device, said second end having either of a hooking portion and a looping portion of a removable attachment device positioned upon an upper surface for removable attachment to said antispasticity aid device;

at least one elastic member, said elastic member being disposed between said bracket and an underside of said support platform; and

said elastic member providing resistive stability for said platform when supporting a hand and arm of a stroke victim.

24. A fifth accessory for use with either of said antispasticity aid device as described in Claim 19 and said antispasticity aid device as described in Claim 19 having a fixed thumb-mounting member, comprising:

a floor bracket, said floor bracket having an upper surface, a lower surface, a pivotal mounting bracket affixed to said upper surface and a non-slip finish on said lower surface;

an adjustable support shaft, said support shaft having an upper portion, a lower portion, said lower portion fitting slidably within said upper portion and having a clamping mechanism for adjustably fastening said upper portion to said lower portion at a variety of heights;

said lower portion having a fitting affixed at a lower end, said fitting being sized and shaped to fit said pivotal mounting bracket;

said upper portion having a handle at an upper end, said handle being sized and shaped to accept said mounting bracket of said antispasticity aid device; and

whereby when said antispasticity aid device is removably affixed to said handle, a stroke victim will use said fifth accessory to exercise the arm and shoulder muscles.

25. A sixth accessory for use with either of said antispasticity aid device as described in Claim 20 and said antispasticity aid device as described in Claim 20 having a fixed thumb-mounting member, comprising:

a support tab, said support tab having a first surface and a second surface, an aperture penetrating said first and second surfaces, either of a hooking portion and a looping portion of a removable attachment device affixed to one of said first and second surfaces;

said portion providing a mechanism for removably attaching said support tab to said antispasticity aid device;

an elastic chord, said elastic chord having a first end, a second end and being attached at said first end to said support tab through said aperture and having a mechanism at said second end for forming a loop adjacent said second end;

said loop serving to attach said elastic chord to a support fixture; and

whereby, when said antispasticity aid device is attached to a hand of a stroke victim and said antispasticity aid device is attached to said support tab and said loop is attached to said fixture, said hand and arm of said stroke victim will be suspended for ease of washing.

26. The sixth accessory, as described in Claim 25, further comprising a weakened portion in said elastic chord, said weakened portion providing a safety feature for said stroke victim in the event said stroke victim should fall, the safety feature preventing said stroke victim from being suspended by said sixth accessory.

27. The sixth accessory, as described in Claim 25, further comprising:

a coupling in said elastic chord, said coupling having an attaching portion and a receiving portion;

said attaching portion being affixed to an upper end of a lower portion of said elastic chord and having a head section and a reduced cross-section neck section disposed below said head section;

said receiving portion being affixed to a lower end of an upper portion of said elastic chord having a cavity, said cavity being sized and shaped to frictionally fit over said attaching portion and having a resilient surrounding lower rim, said rim being sized and shaped to fit into said neck section; and

whereby, when a downward pressure on said sixth accessory exceeds pressure required to locate said attaching portion in said receiving portion, said attaching portion and said receiving portions will separate, providing a safety feature for a stroke victim using said sixth accessory.

28. A seventh accessory for use with either of said antispasticity aid device as described in Claim 1 and said antispasticity aid device as described in Claim 1 having a fixed thumb-mounting member, comprising:

a resilient arm support member, said arm support member having a first end, a second end and being formed into a loop, said loop being joined by an intermediate bridging member;

said resilient arm member being sized and shaped to fit frictionally over a wheelchair arm and to provide a channel at an upper surface suitable for resting of a stroke victim's arm;

at least one retaining strap, said retaining strap having a first portion and a second portion, each of said portions being attached to an outer edge of said loop and having either of a looping means and a hooking means attached to said portions to permit said retaining strap to be fastened over an arm of a stroke victim.

29. The seventh accessory, as described in Claim 28, further comprising a hand support platform, said hand support platform being attached to at least one end of said loop and being sized and shaped to fit beneath said antispasticity aid device, and having a series of slots for accepting retaining straps to hold said antispasticity aid device to said hand support platform.

30. An eighth accessory for use with either of said antispasticity aid device as described in Claim 20 and said antispasticity aid device as described in Claim 20 having a fixed thumb-mounting member, comprising:

a vertically oriented mounting structure, said mounting structure having an upper end, a lower end, a support base disposed at said lower end and a central adjusting tract;

a bearing mount, said bearing mount being slidably affixed to said central adjusting track and having a curved exterior edge;

a bearing, said bearing being affixed to a center of said bearing mount;

a planar positioning member, said positioning member having a perimeter, a front surface, a rear surface and being affixed to said bearing at a center portion of said rear surface;

a planar, L-shaped control bracket, said control bracket being pivotally mounted adjacent a corner of said L-shape to said front surface of said positioning member adjacent said perimeter, and having a control bracket bearing mounted at one end of said L-shape;

at least one stop pin, said stop pin being mounted to said front surface of said positioning member and being disposed between arms of said L-shaped control bracket;

an antispasticity aid support member, said support member having an upper surface and a lower surface, being pivotally mounted to said control bracket bearing, being sized and shaped to support said stroke victim aid, and having either of a hooking portion and a looping portion of a removable attachment device affixed to said upper surface of said support member for attachment to said antispasticity aid device;

a first elastic member, said first elastic member having a first end and a second end and being attached at said first end to said rear surface of said planar positioning member adjacent said perimeter and being attached at said second end to said curved exterior edge of said bearing mount; and

whereby, when said antispasticity aid device is attached to a hand of a stroke victim and said antispasticity aid device is attached to said support member, said eighth accessory will provide a mechanism for exercising arm muscles of said stroke victim, permitting rising extension of said arm muscles.

31. The eighth accessory, as described in Claim 30, further comprising a second elastic member, said second elastic member having a first end and a second end and being attached at said first end to said front surface of said planar positioning member inward from said perimeter and being attached at said second end to said support member, thereby providing additional stability for said arm of said stroke victim as said eighth accessory is used for exercising said arm of said stroke victim.

32. A ninth accessory for use with either of said antispasticity aid device as described in Claim 1 and said antispasticity aid device as described in Claim 1 having a fixed thumb-mounting member, comprising:

a support platform, said support platform being formed of planar semi-rigid, resilient material, having a hand-support section and an arm support section, and being attached to a wheelchair;

said hand support section having a distal end and a proximate end and being sized and shaped to support said antispasticity aid device;

said arm support section having a first section and a second section, said first section having a first end and a second end, said second section having

a first end and a second end, and said first section of said arm support section being attached at said first end to said proximate end of said hand support section;

an elastic element, said elastic element having a front end and a rearward end, said front end of said elastic element being attached to said second end of said first section of said arm support section, and said rearward end of said elastic element being attached to said first end of said second section of said arm support section;

whereby, when said ninth accessory is attached to said antispasticity aid device and said antispasticity aid device is attached to the hand of a stroke victim, said ninth accessory will permit said stroke victim to apply force against said elastic element to provide physical therapy for arm muscles of said stroke victim.

33. The ninth accessory as described in Claim 32, further comprising a means for attaching said front end of said elastic element to said second end of said first section of said arm support section and said rearward end of said elastic element to said first end of said second section of said arm support section.

34. The ninth accessory as described in Claim 33, wherein the means for attaching said front end of said elastic element to said second end of said first section of said arm support section and said rearward end of said elastic element to said first end of said second section of said arm support section further comprise:

at least one bracket, said bracket having a first end and a second end, and being attached to either of said second end of said first section of said arm support section and said first section of said second section of said arm support section to said first end of said bracket.

35. The ninth accessory as described in Claim 32, further comprising an extension spring, said extension spring having a front end and a rearward end, and said front end of said extension spring being attached to said second end of said first section of said arm support section, and said rearward end of said extension spring being attached to said first end of said second section of said arm support section.

36. The ninth accessory as described in Claim 32, further comprising a mechanism of attaching said support platform at said second end of said second section of said arm support section to a hollow tube at the rear of said wheelchair.

37. The antispasticity aid device, as described in Claim 3, further comprising:

a plurality of detents, said detents being disposed at said rear edge of said thumb-mounting member;

a ball channel, said ball channel being disposed in either of said first side edge and said second side edge of said hand-mounting member, and having a compression spring disposed within said channel;

a positioning ball, said ball being sized and shaped to fit slidably within said channel and to fit within said detents, said ball being maintained in one of said detents by said compression spring; and

whereby, when pressure is applied to a side edge of said thumb mounting member, said ball will be moved from one detent to the next, said compression spring tending to maintain a position of said thumb mounting member with respect to said hand mounting member.

38. The antispasticity aid device, as described in Claim 3, further comprising:

a plurality of notches, said notches being disposed at either of said first side edge and said second side edge of said hand-mounting member;

a protruding finger, said protruding finger being disposed at said rear edge of said thumb-mounting member and being sized and shaped to removably engage any one of said notches; and

whereby, when said protruding finger is disposed in one of said notches, said finger will maintain a position of said thumb mounting member with respect to said hand mounting member.

39. The planar hand-mounting member, as described in Claim 1, further comprising an raised padding portion, said raised padding portion being formed of resilient padding material, and being sized and shaped to fit over an upper surface of said planar hand-mounting member; and

whereby, when said raised padding portion is fit over said upper surface of said planar hand-mounting member, and said raised padding portion is attached to a hand of a stroke victim, the knuckles of said stroke victim will be elevated above the fingertips of said stroke victim thereby allowing said hand of said stroke victim to be comfortably positioned on said planar hand-mounting member.

40. The planar hand-mounting member, as described in Claim 39, wherein said raised padding portion being formed of an FDA approved foam material.

41. The planar hand-mounting member, as described in Claim 39, wherein said planar hand-mounting member being covered with washable material.

42. The planar hand-mounting member, as described in Claim 41, wherein said washable material being removable and replaceable.